

What is claimed is:

1. An optical signal converter comprising:
an optical signal detector, which detects an optical signal reflected from an optical disc in a reproduction mode and converts the detected optical signal into an electrical signal;
a gain control signal generator, which generates a gain control signal when a voltage level of a driving signal used to drive the optical disc exceeds a maximum output voltage of the optical signal converter;
a gain switcher, which selects an amplification gain of the optical signal converter in response to the gain control signal and an external control signal; and
a signal amplifier, which amplifies the electrical signal output from the optical signal detector in response to an output signal of the gain switcher.
2. The optical signal converter of claim 1, wherein the gain control signal generator comprises:
a comparator, which compares the voltage level of the driving signal used to drive the optical disc with the maximum output voltage of the optical signal converter and generates a predetermined signal when the voltage level of the driving signal exceeds the maximum output voltage of the optical signal converter; and
a gain control signal generator, which generates the gain control signal and controls an amplification gain of a signal amplified by the signal amplifier when the predetermined signal is generated.
3. The optical signal converter of claim 1, wherein the gain switcher selects one of a high gain mode, a mid-gain mode, and a low gain mode based on a mode control signal.
4. The optical signal converter of claim 3, wherein when the gain control signal is generated, the gain switcher reduces the amplification gain of the signal amplifier.
5. A method of controlling an amplification gain of an optical signal converter, the method comprising:
determining whether a current mode is a reproduction mode;

if the current mode is the reproduction mode, detecting a rotating speed of an optical disc;

comparing a driving signal used to drive the optical disc with a maximum output voltage of the optical signal converter; and

if a voltage level of the driving signal used to drive the optical disc is higher than the maximum output voltage of the optical signal converter, controlling an amplification gain of the optical signal converter.

6. The method of claim 5, wherein if the voltage level of the driving signal used to drive the optical disc is lower than the maximum output voltage of the optical signal converter, one of a plurality of gain modes designated by a user is used and the amplification gain is not controlled based on the comparison.

7. The method of claim 6, wherein the plurality of gain modes designated by the user comprise a high gain mode, a mid-gain mode, and a low gain mode.

8. The optical signal converter of claim 3, wherein the gain switcher selects the high gain mode for use with a DVD-RAM disc or an RW disc.

9. The optical signal converter of claim 3, wherein the gain switcher selects the mid-gain mode for use with a CD-ROM or a DVD-ROM.

10. The optical signal converter of claim 3, wherein the gain switcher selects the low gain mode for use with a CD-RW disc or an RW disc.

11. The optical signal converter of claim 7, wherein the high gain mode is used with a DVD-RAM disc or an RW disc.

12. The optical signal converter of claim 7, wherein the mid-gain mode is used with a CD-ROM or a DVD-ROM.

13. The optical signal converter of claim 7, wherein the low gain mode is used with a CD-RW disc or an RW disc.

14. An optical signal converter comprising:
an optical signal detector which detects an optical signal reflected from an optical disc in a reproduction mode and converts the detected optical signal into an electrical signal;
a signal amplifier which amplifies the electrical signal according to an amplification gain;
a gain control signal generator, which generates a first control signal when a voltage level of a driving signal used to drive the optical disc exceeds a predetermined value; and
a gain switcher which generates a second control signal to control the amplification gain of the signal amplifier in response to the first control signal and a third control signal which designates an initial amplification gain.

15. The optical signal converter of claim 14, wherein a value of the third control signal corresponds to a type of the optical disc.

16. The optical signal converter of claim 14, wherein the second control signal controls the signal amplifier to reduce the amplification gain in response to the first control signal.